REMARKS

Reconsideration of the pending claims in view of the above amendments and following remarks is respectfully requested.

Claim 1 is amended by inserting the feature from Claim 4 that "the relative amount of inorganic oxide to polymeric crosslinking agent is from 500:1 to 15:1" and is supported by the claims as originally filed and the specification. Claim 4, which depends from Claim 1, is amended correspondingly. Claims 10 and 11 are cancelled without prejudice to or disclaimer of the subject matter therein. Claim 15 is rewritten in independent form.

Applicants thank Examiner Shosho for the acknowledgement that all outstanding rejections were overcome by Applicants' amendment filed September 15, 2003, and that Claims 12 and 15 would be allowable if rewritten in independent form.

35 USC § 102(b)

Claims 1-4, 8-11, 13 and 14 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Yasuda et al., US Patent No. 5,213,873. According to the Office Action, Yasuda et al. discloses a coating composition for forming a coating on a support for use in ink jet printing wherein the composition comprises an aqueous liquid medium having dispersed therein 40-80% silica, 15-40% binder including polyvinyl alcohol, and 5-20% cationic polymeric material which reacts with surfaces of the fine silica particles, and a process comprising applying the above composition to a support to form coated substrate. A calculation of a ratio of silica to binder is 1:1 to 5.3:1, a calculation of the ratio of silica to cationic polymeric material is 2:1 to 16:1, and a calculation of the ratio of binder to cationic polymeric material is 0.75:1 to 8:1, as reported in the Office Action. For at least the following reasons, Applicants traverse the rejection.

Yasuda et al. discloses an aqueous ink-jet recording sheet having a substrate with an aqueous ink image-receiving layer formed on the surface thereof. The ink-receiving layer comprises fine silica particles, a binder comprising polyvinyl alcohol or a derivative thereof, and a cationic polymeric material comprising at least one cationic, water-soluble acrylic copolymer having side chains, each having at least two cationic radicals (see column 4, lines 8-22). The cationic polymeric material appears to be used as a mordant material.

Claim 1, from which Claims 2-4, 8, 9, 13, and 14 depend, is directed to a coating fluid for forming a coating on a support, wherein the fluid comprises a liquid medium having dispersed therein an inorganic oxide, a binder polymer, and a polymeric crosslinking agent having functional groups for reaction with the inorganic oxide. Yasuda et al. does not disclose a polymeric crosslinking agent having functional groups for reaction with the inorganic oxide. There is no teaching in Yasuda et al. that the silica is crosslinked with the cationic polymeric material. It is theorized in Yasuda et al. that the benefits of the composition may arise from the association of the silica with the cationic polymeric material (*see* column 5, line 55 – column 6, line 2) and "it is assumed that *the cationic polymeric material is combined with the surfaces of the fine silica particles*" (column 5, lines 66-68, emphasis added). The positively charged cationic polymeric material, it appears, associates with the negatively charged surfaces of the silica particles. The silica particles are not crosslinked by the cationic polymeric material. Accordingly, Yasuda et al. does not disclose or suggest the subject matter of independent Claim 1, or Claims 2-4, 8, 9, 13, and 14 dependent therefrom. For at least the above reasons, reconsideration and withdrawal of the rejection are in order.

35 USC § 102(e)

Claims 1-3, 5, 7-9 and 13 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Mukoyoshi et al., US Patent No. 6,187,430. According to the Office Action, Mukoyoshi et al. discloses an ink jet recording sheet comprising an ink-receiving layer formed from a composition comprising aqueous liquid medium, 100 parts silica, 1-100 parts binder, and polymer resin modified with silanol that reacts with the silica so that the polymer and silica are connected to each other through Si-O-R bonds. Attention is drawn, in the Office Action, to Example 1, which discloses a composition comprising 80 parts silica, 20 parts binder, and 40 parts of silica composite product that comprises a ratio of copolymer to silica of 40/60. A calculation of a ratio of silica to binder is approximately 5:1, a calculation of the ratio of silica to copolymer is 6.5:1, and a calculation of the ratio of binder to copolymer is 1.2:1, as reported in the Office Action. For at least the following reasons, Applicants traverse the rejection.

Mukoyoshi et al. discloses an ink jet recording sheet comprising a substrate sheet having a cast-coated layer and an undercoat layer therebetween. The

undercoat layer may comprise a pigment such as silica or alumina, a composite material of a polymer of a monomer having an ethylenically unsaturated group with a colloidal silica, and a binder comprising an aqueous polyurethane resin. The composite material may be formed either by polymerising the ethylenically unsaturated monomers in the presence of a silane coupling agent and a colloidal silica, or by reacting a polymer resin modified with silanol groups with colloidal silica (see column 7, lines 1-13). Example 1 of Mukoyoshi et al. discloses a coating composition for coating a substrate, which comprises silica particles, a polyvinyl alcohol as a binder, and an emulsion of a colloidal silica composite product (the composite material). The composite material, as mentioned above, may be prepared by crosslinking a polymer of an ethylenically unsaturated monomer (in this case, styrene-2-methylhexyl acrylate copolymer) with colloidal silica to result in conglomerated crosslinked particles having a particle size of 80nm.

Claim 1, from which claims 2, 3, 5, 7-9, and 13 depend, is directed to a coating fluid for forming a coating on a support, wherein the fluid comprises a liquid medium having dispersed therein an inorganic oxide, a binder polymer, and a polymeric crosslinking agent ***having functional groups for reaction*** with the inorganic oxide. In Example 1 of Mukoyoshi et al., there are no functional groups ***for reaction*** with the inorganic oxide because any functional groups have already been used in making the composite material. Further, the ratio of the amount of silica to the amount of polymeric crosslinking agent used in preparing the coating composition in Mukoyoshi et al. is 6.5:1, whereas Claim 1 requires the relative amounts to be within the range from 500:1 to 15:1. Accordingly, Mukoyoshi et al. does not disclose or suggest the subject matter of independent Claim 1, or Claims 2, 3, 5, 7-9, and 13 dependent therefrom. For at least the above reasons, reconsideration and withdrawal of the rejection are in order.

35 USC § 103(a)

Claim 6 was rejected under 35 USC § 103(a) over Mukoyoshi et al., U.S. Patent No. 6,187,430, in view of EP-A-0976572. The Office Action admits Mukoyoshi et al. does not disclose the claimed polymeric crosslinking agent. The Office Action relies on EP-A-0976572 for a teaching of the equivalence and interchangeability of silanol modified protein as claimed by Applicants with silanol modified polyvinyl alcohol as disclosed by Mukoyoshi et al., to react with silica to

produce water resistant and durable images. For at least the following reasons, Applicants traverse the rejection.

As discussed above, Mukoyoshi et al. discloses an undercoat layer having a ratio of silica to crosslinking agent of 6.5:1 and a ratio of silica to binder of 5:1. Even if the binder is considered to be a crosslinking agent for the purpose of calculating a total amount of crosslinking agent used, the ratio of silica to crosslinking agent plus silyl modified polyvinyl alcohol would be 11.5:1, which is outside the range of 500:1 to 15:1 set forth in Claim 1. Even if the silyl modified polyvinyl alcohol of Example 1 is replaced with silanol modified protein, following the alleged teaching of EP-A-0976572 that silanol modified polyvinyl alcohol and silanol modified protein are equivalent, the resultant composition would not lead to the invention of Claim 6 because the resulting ratio of silica to silanol modified protein would be approximately 5:1 (or if combined with the amount of crosslinking agent used in the composite material, 11.5:1), well outside the range of ratios set forth in Claim 6 as it depends from Claim 1. Thus, EP-A-0976572 does not overcome the deficiencies of Mukoyoshi et al. Accordingly, Mukoyoshi et al. in view of EP-A-0976572, does not disclose or suggest the subject matter of Claim 6. For at least the above reasons, reconsideration and withdrawal of the rejection are in order.

In view of the foregoing remarks, reconsideration of the above-identified patent application is respectfully requested. Prompt and favourable action by the Examiner is earnestly solicited. Should the Examiner require anything further, the Examiner is invited to contact Applicants' representative.

Respectfully submitted

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